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John W. Flannagan Reservoir

2019 Fisheries Management Report

Flannagan Reservoir is a 1,143-acre impoundment located in Dickenson County. The reservoir was built to provide flood control, fish and wildlife habitat and recreational opportunities. The U.S. Army Corps of Engineers completed construction of the dam and project in 1964. Fifty miles of beautiful shoreline consisting of mature hardwood forest interspersed with spectacular rock bluffs surround this deep, clear reservoir. At full pool elevation of 1,396 feet above sea level, the lake has a maximum depth of 166 feet and an average depth of 58 feet. The lake level fluctuates about 16 feet in a normal water year. The lake is drawn down to winter pool during October and November, and is typically returned to summer pool in April.

Flannagan Reservoir is home to a variety of sport fish species including: largemouth and smallmouth bass, walleye, hybrid striped bass, channel catfish, flathead catfish, crappie, bluegill, rock bass, common carp and musky. Alewives and gizzard shad provide forage for the sportfish populations. Most of these populations are self-sustaining and do not require maintenance stockings.

The overall fisheries management goal for Flannagan Reservoir is to provide quality angling opportunities for a diversity of fish species. In order to provide quality fishing opportunities, fish populations need to offer both abundance and good size structure. Abundance is measured in terms of how many fish are collected per hour of electrofishing or per net night of sampling. Size structure is measured by looking at the proportion of adult fish in the sample that are larger than a given size. For example, we consider the proportion of adult largemouth bass larger than 15 inches, or the proportion of adult black crappie that are over 10 inches. Catch rates and size structure data provide a standardized means of comparing this year's fish sample to last year's catch, as well as to the samples collected at other lakes. Catch rates do not represent the number of fish you might catch while fishing, because you may be more or less effective than the sampling gear. Size structure measures give information about the sizes of fish available in the population.

Stocking

Flannagan Reservoir is currently managed as a priority walleye water with the goal of maintaining an exceptional walleye population. As a priority walleye water, the lake generally receives annual stockings of walleye at a rate of about 100 fingerlings per acre. However, due to poor hatchery production in 2018 no walleye were stocked. Approximately 57,000 black crappie fingerlings and 17,250 hybrid striped bass fingerlings were released into Flannagan Reservoir in 2018.

Regulations

Species	Length Limit	Creel Limit
Bass (largemouth and smallmouth)	12-inch minimum	5 per day combined
Sunfish (all species combined)	none	50 per day
Crappie	10-inch minimum	25 per day
Walleye	18-inch minimum	5 per day
Hybrid striped bass	20-inch minimum	4 per day
Catfish (channel and flathead combined)	none	20 per day
Muskellunge	30-inch minimum	2 per day

Population Sampling

Black Bass - Largemouth bass was the most abundant species in the 2018 spring electrofishing sample. Over 200 largemouth bass were sampled resulting in a catch rate of 37 fish/h. This was slightly lower than the catch rate in 2017 (46 fish/h) and the average catch rate from the preceding eleven years (49 fish/h; Figure 1). The catch rate for largemouth bass was highest in the Pound River (51 fish/) arm of the lake followed by the main (lower) portion of the lake (40 fish/h). The catch rate of largemouth bass in the Cranesnest River (22 fish/h) was the lowest observed among the three sections. This was uncharacteristically low for this section. However, the sample for this section was conducted over a week later than normal, and water temperatures were higher.

Largemouth bass sampled in 2018 ranged in length from 5 – 22 inches with an average length of 13.7 inches (Figure 2). Eighty-two percent of adult largemouth bass were ≥ 12 in and 36% exceeded 15 inches. Fish ≥ 20 inches accounted for 3% of the sample. Although no trophy-size largemouth bass were collected, the sample suggests that there are good numbers of harvestable-size fish (≥ 12 in) available to anglers. However, the abundance of fish exceeding the 12-inch minimum length limit for largemouth bass suggests that harvest of legal-size fish is low. This is supported by the results of the 2016 creel survey in which anglers voluntarily released 88% of the legally harvestable largemouth bass caught.

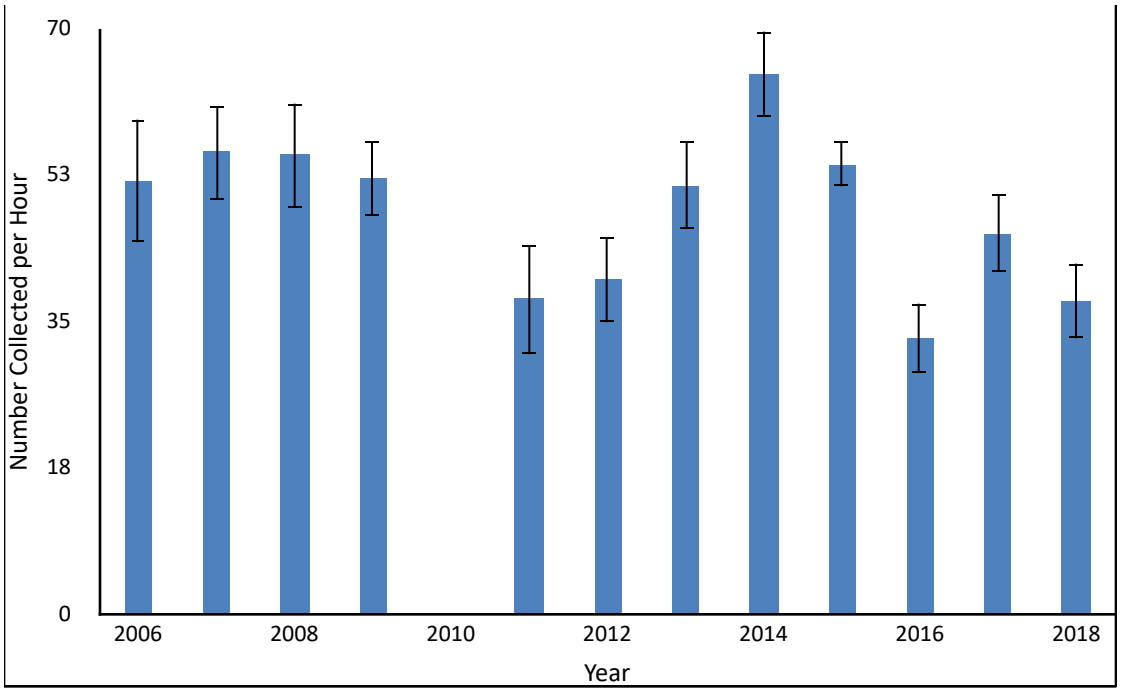

Figure 1. Number of largemouth bass collected per hour of electrofishing in Flannagan Reservoir annually from 2006-2018. Error bars indicate standard error. The lake was not sampled in 2010.

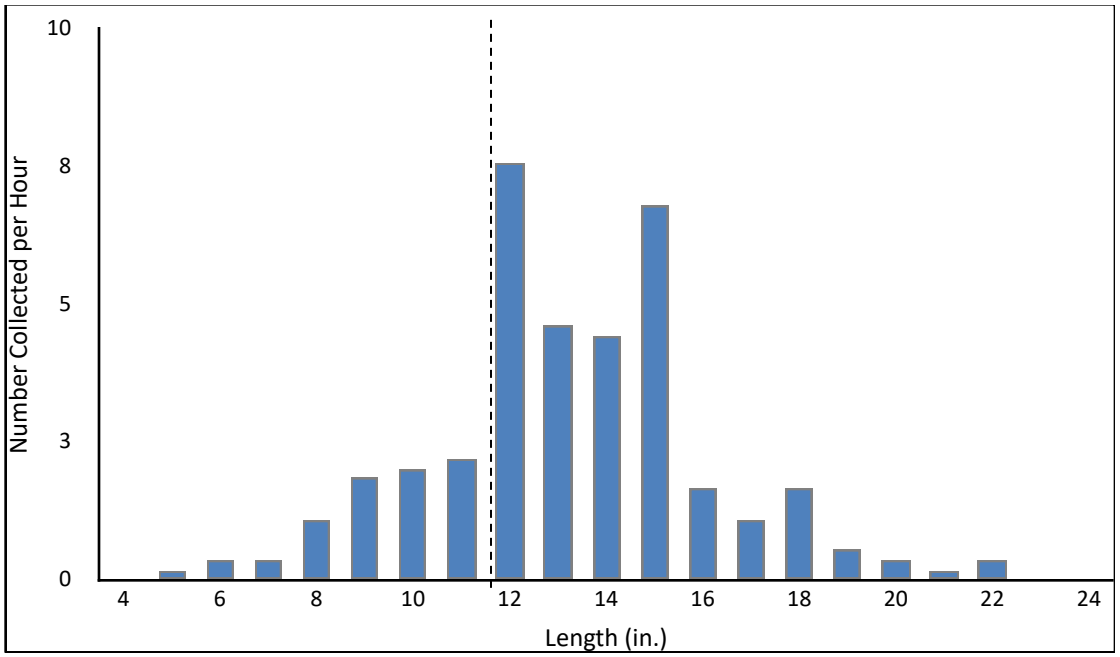

Figure 2. Length frequency distribution of largemouth bass collected from Flannagan Reservoir during electrofishing samples in spring 2018. Dashed, vertical line represents the 12-inch minimum length limit for this species.

Walleye/Saugeye – The combined catch of walleye and saugeye in the 2018 fall gill netting sample was down approximately 14% from the previous year. Some of this decline can be attributed to the missing Age-2 fish that resulted from the lack of stocking in 2016. Walleye in the sample ranged in length from 12 - 23 inches while saugeye measured from 18 – 23 inches.

Walleye from the 2014 stocking cohort (Age-4) accounted for approximately 39% of the walleye/ saugeye sample. Saugeye stocked in 2013 (Age-5) accounted for 15% of the sample. Few fish older than Age-4 were collected in the samples, which is characteristic of walleye fisheries where exploitation is high.

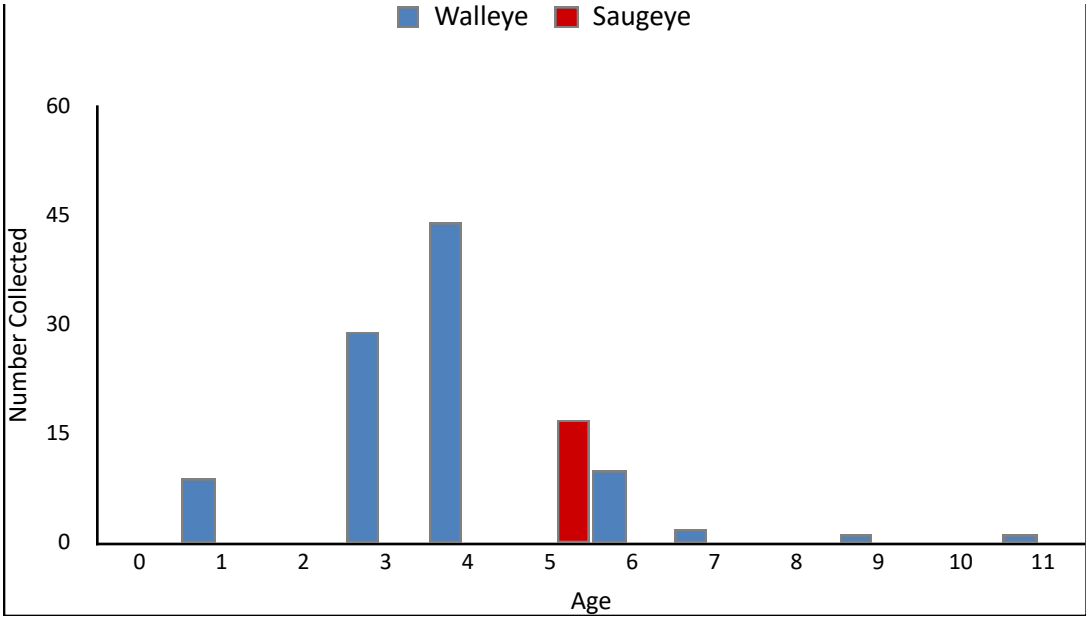

Figure 3. Age frequency distribution of walleye and saugeye collected from Flannagan Reservoir during gill netting samples in December 2018.

Crappie - Since 1998, one fisheries management goal has been to re-establish the black crappie population in Flannagan Reservoir. Biologists have used a variety of strategies to accomplish this task. The annual stocking of about 1,000 adult black crappie (6 to 8 inches) from 1998 to 2002 was the first step toward recovery. Habitat enhancement has also played a vital role in the effort. A 10-inch minimum length limit was also established to allow crappie an opportunity to spawn for a couple of seasons before being legal for harvest.

The relative abundance of crappie populations varies considerably from year to year and crappie are often characterized as having “boom and bust” cycles of abundance. This variability in abundance is generally the result of inconsistent spawning success. When the crappie population has a really good spawn, that year class of fish will increase the population abundance and provide good fishing for several years. Poor spawning success creates missing year classes that have the opposite effect. The black crappie population in Flannagan may be coming off of a “boom” period as indicated by a spring 2018 electrofishing catch rate of 1 fish/hr. This represents a continued decline from previous years. Fifty percent of the adult black crappie sampled exceeded the 10-inch minimum length limit for this species. So although overall numbers of crappie are down, the current population is providing opportunities for anglers to harvest crappie.

Hybrid Striped Bass –Hybrid striped bass were not well represented in the 2018 gill net samples from Flannagan Reservoir with just 11 fish being collected. Rather than an issue of abundance, this low number likely represents the difficulty in sampling this species. All hybrid striped bass sampled exceeded the 20-inch minimum length limit for this species. Additionally, 27% of the hybrid striped bass were 24 inches or longer.

Other species - Flannagan also offers some very good fishing for bluegills and redear sunfish. Population sampling yielded good numbers and sizes of both species. Channel and flathead catfish populations provide good fishing opportunities as well. Again, samples yield mostly "average size" catfish, whereas anglers often catch trophy cats. Although not abundant, muskellunge are present and can provide some exciting action for those anglers lucky enough to hook one. Some huge carp also roam Flannagan's clear waters, just waiting to test an angler's skills and equipment.

Please remember that moving fish from one lake to another is not a good practice. Stocking fish can have undesirable effects on the existing fish populations through predation, competition or diseases introduction. Stocking fish into a public lake or any stream without a written authorization from the Department of Game and Inland Fisheries is also ILLEGAL.

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